

CLAIMS

What Is Claimed Is:

1. An improved infrared transceiver system comprising:

first sensing means for detecting infrared signals incident thereon and converting said signals to an electrical current signal;

gain control means for amplifying said current signals; and

voltage conversion means for converting said current signals into voltage signals.
2. The system of Claim 1, wherein said first sensing means comprises a diode.
3. The system of Claim 2, further comprising staged amplification means in circuit between said gain control means and said voltage conversion means, said staged amplification means configured to amplify said current signals.
4. The system of Claim 2, wherein said gain control means comprises a current mirror in operative connection with a transimpedance amplifier.
5. The system of Claim 4, wherein said transimpedance amplifier comprises:

a first transistor means, said first transistor means comprising a first drain and a first gate;

a second transistor means, said second transistor means comprising a second source and a second drain, said second source being in circuit with said first drain;

a third transistor means, said third transistor means comprising a third gate and a third source, said third gate being in circuit with said second drain; and

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a fourth transistor means, said fourth transistor means comprising a fourth drain and a fourth gate, said fourth drain in circuit with said fourth gate and said first gate.

Sub F1 7 6. The system of Claim 5, wherein said current mirror is in circuit with said second drain and said third gate.

7. The system of Claim 5, further comprising an output terminal, said output terminal being in circuit with said third source and said fourth drain.

8. The system of Claim 7, wherein each said transistor means comprises bias voltage, and wherein said bias voltage is dynamically adjustable in order to operate each said transistor in a weak inversion range.

9. A improved method for detecting and amplifying incident wireless signals, said method being implemented in a infrared transceiver system comprising signal detecting means and signal amplifying means, said method comprising the steps of:

said signal detecting means converting said incident wireless signals into electrical current signals; and

said amplifying means amplifying said electrical current signals.

10. The method of Claim 9, wherein said gain control means further comprises staged current amplification means for amplifying said current signals in stages, said current amplification means in circuit before said voltage conversion means.

11. An improved wireless signal receiver system, comprising:

first sensing means for detecting wireless signals incident thereon and converting said signals to an electrical current signal;

gain control means for amplifying said current signals; and

voltage conversion means for converting said current signals into voltage signals.

12. The system of Claim 11, further comprising staged amplification means in circuit between said gain control means and said voltage conversion means, said staged amplification means configured to amplify said current signals.

13. The system of Claim 12, wherein said gain control means comprises a current mirror in operative connection with a transimpedance amplifier.

14. The system of Claim 13, wherein said transimpedance amplifier comprises:

a first transistor means, said first transistor means comprising a first drain and a first gate;

a second transistor means, said second transistor means comprising a second source and a second drain, said second source being in circuit with said first drain;

a third transistor means, said third transistor means comprising a third gate and a third source, said third gate being in circuit with said second drain; and

a fourth transistor means, said fourth transistor means comprising a fourth drain and a fourth gate, said fourth drain in circuit with said fourth gate and said first gate.

15. The system of Claim 14, wherein said current mirror is in circuit with said second drain and said third gate.

16. The system of Claim 14, further comprising an output terminal, said output terminal being in circuit with said third source and said fourth drain.

17. The system of Claim 16, wherein each said transistor means comprises bias voltage, and wherein said bias voltage is dynamically adjustable in order to operate each said transistor in a weak inversion range.

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